

Claims

What is claimed is:

1. An automated method of configuring routing attributes of ports within an SAS network domain, comprising:
 - automatically discovering devices of the SAS network domain;
 - automatically discovering ports of the discovered devices; and
 - automatically configuring routing attributes of discovered ports.
2. The method of claim 1 wherein the steps of discovering devices, discovering ports and configuring ports each include a step of exchanging SMP messages.
3. The method of claim 2 further comprising:
 - configuring routing table information within devices of the SAS network domain wherein said routing table information is sufficient to identify paths in the SAS network domain to enable the exchange of said SMP messages.
4. The method of claim 2 further comprising:
 - completely configuring routing table information to identify all paths for exchange of messages within the SAS network domain.
5. The method of claim 4 wherein the step of completely configuring is substantially integrated with the steps of discovering devices, discovering ports and configuring ports .
6. The method of claim 1 wherein the step of discovering devices further comprises:
 - transmitting an SMP Discover request from a first device to a neighboring device of the first device; and
 - receiving an SMP Discover response in said first device from said neighboring device identifying the other devices coupled to ports of said neighboring device.
7. The method of claim 1 wherein the step of discovering ports of discovered devices further comprises:

transmitting an SMP Report General request from a first device to a neighboring device of the first device; and
receiving an SMP Report General response in said first device from said neighboring device identifying the number of ports within said neighboring device.

8. The method of claim 1 wherein the step of configuring further comprises:
transmitting an SMP request from a first device to a second device wherein the SMP request includes vendor unique information identifying a routing attribute to be configured for a port of said second device.

9. The method of claim 1 further comprising:
recursively repeating the steps of the method to traverse devices of the SAS network domain to configure routing attributes of ports of devices of the SAS network domain.

10. An SAS network domain, comprising:
a plurality of expander devices providing a plurality of ports within the domain wherein each port may have an associated routing attribute; and
a domain control element coupled to at least one of the plurality of expander devices operable to configure routing attributes of the plurality of ports, wherein the domain control element is operable to configure the routing attributes of the ports by traversing port connections between the expander devices.

11. The SAS network domain of claim 10 wherein the domain control element comprises:
an SAS initiator device coupled to at least one of the plurality of expander devices.

12. The SAS network domain of claim 10 wherein the domain control element comprises:
an SAS expander device coupled to at least one of the plurality of expander devices.

13. The SAS network domain of claim 10 wherein the each of the expander devices comprises a routing table and wherein the domain control element is further adaptable to configure the routing tables of the expander devices.
14. An SAS network domain comprising:
means for discovering the topology of the SAS network domain by traversing port connections between devices of the domain; and
means for configuring SAS routing attributes associated with ports of devices of the domain in response to discovery of the topology of the domain.
15. The SAS network domain of claim 14 further comprising:
means for configuring routing tables in devices of the domain.
16. The SAS network domain of claim 15 wherein said means for configuring routing tables and said means for discovering and said means for configuring SAS routing attributes are substantially integrated so as to traverse port connection between devices of the domain only once.
17. The SAS network domain of claim 14 wherein the means for discovering the topology further comprises:
means for exchanging SMP messages between devices of the domain to identify devices and to identify ports of the devices and to identify connections between the ports of the devices.
18. The SAS network domain of claim 17 wherein the means for exchanging SMP messages further comprises:
means for exchanging an SMP Report General request and response messages to identify ports of devices and connections between ports of devices.
19. The SAS network domain of claim 17 wherein the means for exchanging SMP messages further comprises:
means for exchanging SMP Discover request and response messages to devices of the domain.

20. The SAS network domain of claim 14 wherein the means for configuring further comprises:

means for transmitting an SMP message having vendor unique information from a first device to a second devices to instruct the second device to configure the routing attribute of a port of the second device.